

Patent Claims

1. A rolling mill drive with drive spindles (7, 8) which are arranged between drive units (6) and driven rolls (2, 3) and terminate in spindle heads (11, 12), one spindle head (11) in each case being connected detachably to the neck (9, 10) of a roll, in particular of a working roll, a coupling and decoupling device (13) being arranged between the neck of the roll and the spindle head of the drive spindle, characterized in that the coupling and decoupling device (13) consists of a coupling sleeve (22), a coupling pin (21) inserted releasably into the coupling sleeve and a locking element (23) which is arranged displaceably transversely to the axis of rotation (14, 15) of the neck (9, 10) of the roll (2, 3); is inserted into the coupling sleeve (22) and engages behind the coupling pin (9) in an operating position, and the locking element is designed to be capable of being coupled to a displacing device (17).

2. The rolling mill drive as claimed in claim 1, characterized in that the coupling pin (21) comprises a foot plate (24) for end-side fastening to the neck (9, 10) of the roll and a coupling hook (25) with at least one locking surface (28, 29) projects from this foot plate, in that a longitudinal groove (26) with at least one counter-locking surface (30, 31) is milled into the locking element (23) and,

for guiding the coupling hook (25) in and out, the longitudinal groove has a coupling opening (37) at one location, in that the locking element (23) can for releasing and connecting the coupling and decoupling device (13) be brought by means of the displacing device (17) into a release position in which the coupling opening (37) in the locking element (23) is aligned with the coupling hook (25) and the locking element can be brought into an operating position in which the locking surface (28, 29) on the coupling hook (25) lies opposite the counter-locking surface (30, 31) on the locking element (23).

3. The rolling mill drive as claimed in claim 2, characterized in that the coupling hook (25) is of T-shaped design and the locking element (23) has a longitudinal groove (26) of T-shaped design.

4. The rolling mill drive as claimed in one of the preceding claims, characterized in that the axes of rotation (14, 15) of the neck (9) of the roll, the axis of rotation (27) of the coupling pin (21) and the axis of rotation (32) of the coupling sleeve (22) of the spindle head (11, 12) are arranged in alignment in relation to one another and the longitudinal axis (34) of the locking element (23) is oriented transversely to this axis of rotation (14, 15, 27, 32) and intersects it.

5. The rolling mill drive as claimed in one of the preceding claims, characterized in that the locking element (23) has a circular cylindrical outer contour and is inserted in a rotationally secured manner into a circular cylindrical bore, preferably a blind hole bore (33), aligned radially in the coupling sleeve (22).

6. The rolling mill drive as claimed in one of the preceding claims, characterized in that the locking element (23) is for fixing its operating position assigned a preloaded tension spring (38) between the locking element and a fixed stop (44) on the coupling sleeve (22).

7. The rolling mill drive as claimed in one of the preceding claims, characterized in that a receiver for a displacing device (17) is arranged at least on one side of the locking element (23).

8. The rolling mill drive as claimed in one of the preceding claims, characterized in that the displacing device (17) comprises a pressure medium cylinder (62), preferably a standard hydraulic cylinder.

9. The rolling mill drive as claimed in one of the preceding claims, characterized in that the coupling sleeve (22) has a peripheral annular groove (54), in that at least

one supporting surface (55) of a spindle support (16) lies opposite the annular groove and this at least one supporting surface (55) is designed to be capable of being brought into engagement with the annular groove in a way supporting the coupling sleeve (22), and in that the displacing device (17) for the locking element (23) is connected to the locking element to ensure synchronous movement of the displacing device and of the supporting surface of the spindle support.

10. The rolling mill drive as claimed in claim 9, characterized in that the displacing device (17) is fastened rigidly to the displaceable spindle support (16).

11. The rolling mill drive as claimed in claim 9, characterized in that the displacing device (17) and the supporting surfaces (55) of the spindle support (16) are connected to a control, preferably a synchronizing control, for synchronizing their movement sequence.